UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

DEC 18 2008

John Mitchell, Director
Kansas Department of Health and Environment
Division of Environment
1000 S.W. Jackson St., Suite 540
Topeka, Kansas 66612-1368

Dear Mr. Mitchell:

On December 26, 2006, the Kansas Department of Health and Environment (KDHE) submitted the Kansas 2006 Section 303(d) list [KS 2006 § 303(d) list] as required by Section 303(d)(1) of the Clean Water Act (CWA). Because of delays in our review of the KS 2006 § 303(d) list, the U.S. Environmental Protection Agency (EPA) did not take formal action on the KS 2006 § 303(d) list. With the lack of a decision and the upcoming submittal of the Kansas 2006 Section 303(d) list [KS 2008 § 303(d) list], EPA requested that KDHE combine both the KS 2006 and 2008 § 303(d) lists together for submission and review. *See,* January 23, 2008, letter from EPA to KDHE. KDHE submitted a consolidated 2006/2008 § 303(d) list for EPA review and decision by letter dated March 27, 2008. EPA received the submittal on March 31, 2008. With today's letter, we have completed the review of the KS 2006/2008 § 303(d) list of impaired waters. The list identifies classified stream segments, lakes, and wetlands of the state which are impaired and for which Total Maximum Daily Loads (TMDLs) shall be developed.

EPA received, in a separate submittal, the KS 2008 CWA § 305(b) report on April 1, 2008. Today's action is on the KS 2006/2008 § 303(d) list.

As Director of the Water, Wetlands and Pesticides Division, I am charged with the responsibility of reviewing and approving or disapproving state 303(d) lists under CWA § 303(c). I am hereby approving the KS 2006/2008 § 303(d) list for the following:

- 381 impaired monitoring stations/pollutant combinations through Kansas' watershed approach for stream monitoring. These 381 monitoring stations/pollutant combinations translate into 2,563 waterbody/pollutant combinations in Category 5.
- 113 waterbody/pollutant combinations that account for impaired lakes or wetlands in Category 5
- 350 waterbody/pollutant combinations that are included in Category 2
- 364 waterbody/pollutant combinations that are included in Category 3
- 261 waterbody/pollutant combinations that are included in Category 4a because of EPA approved TMDL documents

- 9 waterbody/pollutant combinations that are included in Category 4b because of permit in lieu of a TMDL
- 11 waterbody/pollutant combinations that are included in Category 4b because of a watershed plan in lieu of a TMDL
- 21 waterbody/pollutant combinations that are included in Category 4c because of pollution not caused by a pollutant

The enclosure to this letter provides a more detailed description of EPA's approval rationale.

I congratulate you and your staff for the completion of the KS 2006/2008 § 303(d) list and submission process. The task of putting together this list required a significant amount of staff resources and involved a complex evaluation and assessment of water quality data. We look forward to working with KDHE on the development of the KS 2010 § 303(d) list.

If you have any questions regarding this matter please contact John DeLashmit, Chief, Water Quality Management Branch, at (913) 551-7821 or delashmit.john@epa.gov.

Sincerely,

Karen A. Flournoy for

William A. Spratlin
Director
Water, Wetlands and Pesticides Division

Enclosure

cc: Mr. Karl Mueldener, KDHE (with enclosure, without tables)
Mr. Tom Stiles, KDHE (with enclosure and tables)
Ms. Yvonne Anderson, KDHE (with enclosure, without tables)
Mr. John Goodin, EPA Headquarters (with enclosure, without tables)

ENCLOSURE
EPA REGION 7'S ACTION REGARDING
THE KANSAS 2006/2008 CLEAN WATER ACT § 303(d) LIST OF IMPAIRED WATERS

I. Summary

On December 26, 2006, Kansas Department of Health and Environment (KDHE) submitted the Kansas 2006 Section 303(d) list [KS 2006 § 303(d) list] as required by Section 303(d)(1) of the Clean Water Act (CWA). Because of delays in reviewing, U.S. Environmental Protection Agency (EPA) did not take formal action on the list. Because of the lack of a decision and the upcoming submittal of the Kansas 2008 Section 303(d) list [KS 2008 § 303(d) list], EPA requested that KDHE combine both the KS 2006 § 303(d) list and KS 2008 § 303(d) list together for submission and review. *See*, January 23, 2008, letter from EPA to KDHE. KDHE submitted a combined KS 2006/2008 § 303(d) list on March 31, 2008. Following the review of KDHE's submittal, we are approving the KS 2006/2008 § 303(d) list for:

- 381 impaired monitoring station/pollutant combinations through Kansas' watershed approach for stream monitoring. These 381 monitoring stations/pollutant combinations translate into 2,563 waterbody/pollutant combinations in Category 5.
- 113 waterbody/pollutant combinations that account for impaired lakes or wetlands in Category 5
- 350 waterbody/pollutant combinations that are included in Category 2
- 364 waterbody/pollutant combinations that are included in Category 3
- 261 waterbody/pollutant combinations that are included in Category 4a because of EPA approved Total Maximum Daily Load (TMDL) documents
- 9 waterbody/pollutant combinations that are included in Category 4b because of permit in lieu of a TMDL
- 11 waterbody/pollutant combinations that are included in Category 4b because of a watershed plan in lieu of a TMDL
- 21 waterbody/pollutant combinations that are included in Category 4c because of pollution not caused by a pollutant

The following is a list of acronyms used throughout this enclosure:

µg/L	micrograms per liter
BMP	Best Management Practice
CFR	Code of Federal Regulations
cfs	cubic feet per second
CI	Cimarron River Basin
CWA	Clean Water Act
E. coli	*Escherichia coli*
EPA	United States Environmental Protection Agency
EPT	Ephemeroptera, Plecoptera, Trichoptera
FR	Federal Register
HUC	Hydrologic Unit Code
IR	Integrated Report

KAR	Kansas Administrative Regulations
KDHE	Kansas Department of Health and Environment
KR	Kansas-Lower Republican River Basin
KS	Kansas
KSU	Kansas State University
LA	Lower Arkansas River Basin
MC	Marais des Cygnes River Basin
mg/L	milligrams per liter
MO	Missouri River Basin
NE	Neosho River Basin
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
SO	Solomon River Basin
SS	Smoky Hill-Saline River Basin
TMDL	Total Maximum Daily Load
TP	Total Phosphorous
TSS	Total Suspended Solid
UA	Upper Arkansas River Basin
UR	Upper Republican River Basin
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VE	Verdigris River Basin
WA	Walnut River Basin
WQLS	Water Quality Limited Segment
WQS	Water Quality Standard
WRAPS	Watershed Restoration and Protection Strategy

II. Statutory and Regulatory Background

A. Identification of Water Quality Limited Segments for Inclusion on the CWA § 303(d) List

Section 303(d) of the CWA directs states to identify those waters within a state's jurisdiction for which effluent limitations are required by CWA §§ 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standards (WQS). States are to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The CWA § 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long standing interpretation of CWA § 303(d).

EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable standards:

1) technology-based effluent limitations required by the Act,

2) more stringent effluent limitations required by state or local authority, and

3) other pollution control requirements required by state, local, or federal authority. *See,* 40 CFR § 130.7(b)(1).

B. Consideration of Existing and Readily Available Water Quality Limited Data and Information

In developing CWA § 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of all existing and readily available data and information about the following categories of waters:

1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state's most recent CWA § 305(b) report,

2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable WQS,

3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions, and

4) waters identified as impaired or threatened in any CWA § 319 nonpoint assessment submitted to EPA. *See,* 40 Code of Federal Regulations (CFR) § 130.7(b)(5).

In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. EPA's 1991 "Guidance for Water Quality-Based Decisions" describes categories of water quality-related data and information that may be existing and readily available. See *Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991, Appendix C* ("EPA's 1991 Guidance").

In addition to requiring states to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR § 130.7(b)(6) require states to include as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information:

1) a description of the methodology used to develop the list,

2) a description of the data and information used to identify waters, and

3) any other reasonable information requested by the EPA Regional office.

C. Priority Ranking

EPA regulations also codify and interpret the requirement in CWA § 303(d)(1)(A) that states establish a priority ranking for listed waters. The regulations at 40 CFR §

130.7(b)(4) require states to prioritize waters on their CWA § 303(d) lists for total maximum daily load (TMDL) development, and to identify those water quality limited segments (WQLSs) targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. *See*, CWA § 303(d)(1)(A). As long as these factors are taken into account, the CWA provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. *See,* 57 FR 33040, 33045 and EPA's 1991 Guidance.

III. Integrated Report

In the Integrated Report (IR), EPA strongly encourages states to submit a single report that satisfies the reporting requirements of CWA section 303(d), 305(b) and 314. A summary of states' reporting requirements for each of these sections and corresponding regulations is provided below:

> **CWA § 303(d)** – by April 1 of all even numbered years, a list of impaired and threatened waters still requiring TMDLs; identification of the impairing pollutant(s); and priority ranking of these waters, including waters targeted for TMDL development within the next two years.
>
> **CWA § 305(b)** – by April 1 of all even numbered years, a description of the water quality of all waters of the state (including, rivers/stream, lakes, estuaries/oceans and wetlands). States may also include in their CWA § 305(b) submittal a description of the nature and extent of ground water pollution and recommendations of state plans or programs needed to maintain or improve ground water quality.
>
> **CWA § 314** – in each CWA § 305(b) submittal, an assessment of status and trends of significant publicly owned lakes including extent of point source and nonpoint source impacts due to toxics, conventional pollutants, and acidification.

Each IR will report on the WQS attainment status of all waters, document the availability of data and information for each water, identify certain trends in water quality conditions, and provide information to managers in setting priorities for future actions to protect and restore the health of our nation's waters. EPA promotes this comprehensive assessment approach in order to enhance a state's ability to track programmatic and environmental goals of the CWA.

EPA promotes the use of the five-part categorization format for sorting waters in the IR. (*See,* Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the CWA). In summary, the categories are:

> Category 1: All designated uses are supported, no use is threatened,

Category 2: Available data and/or information indicate that some, but not all of the designated uses are supported,

Category 3: There is insufficient available data and/or information to make a use support determination,

Category 4: Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed, and

Category 5: Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

Beginning with the 2008 submittal, Kansas has adopted the EPA recommended format which was submitted on April 1, 2008. A separate, more comprehensive submission package was also received on March 31, 2008 that represents the KS CWA § 303(d) list. Today's decision is based on the March 31, 2008 submittal of Kansas' 2006/2008 § 303(d) list.

IV. Kansas' Approach to the 2008 § 303(d) List

A. Format

The state's IR format included an expansion of Category 4. In summary, they are:

1) Category 4a – includes waters that are threatened or impaired, but for which a TMDL has been completed and approved by EPA,

2) Category 4b – includes waters that have required control measures that are expected to result in the attainment of an applicable WQS in a reasonable period of time, and

3) Category 4c – waters where the non-attainment of any applicable WQS for the waterbody is a result of pollution and is not caused by a pollutant.

EPA regulations acknowledge that alternative pollution control measures may negate the need to develop a TMDL. In the case of Kansas' Category 4b waters, the alternative pollution control measures were either a permit in lieu of a TMDL or a watershed plan in lieu of a TMDL. In both cases, EPA reviewed the permit in lieu of proposals and the proposed watershed plan on a case by case basis to determine if the required elements were fulfilled. These elements support a state's decision to not include certain waterbody/pollutant combinations in Category 5. Specifically, the elements that EPA reviewed included: (*See,* Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act).

1) a statement of the problem causing the impairment,

2) a description of the proposed implementation strategy and supporting pollution controls necessary to achieve WQS, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable WQS,

3) an estimate or projection of the time when WQS will be met,

4) a reasonable schedule for implementing the necessary pollution controls,

5) a description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls, and

6) a commitment to revise as necessary the implementation strategy and corresponding pollution controls if progress towards meeting WQS is not being shown.

B. Methodology

EPA has reviewed the state's submission, and has concluded that KDHE developed its CWA § 303(d) list in compliance with § 303(d) of the CWA and 40 CFR § 130.7(b)(5). EPA's review is based on the Agency's analysis of whether KDHE reasonably considered existing and readily available water quality-related data and information, and reasonably identified waters required to be listed. Kansas' *Methodology for the Evaluation and Development of the 2008 Section 303(d) List of Impaired Waterbodies for Kansas* (*Listing Methodology*) indicates that the state appropriately considered data and information from the state's ambient water monitoring network, CWA 2008 § 305(b) report, CWA 2004 § 303(d) list, CWA § 319 nonpoint assessment, drinking water source water assessment under § 1453 of the Safe Drinking Water Act, computer modeling, KDHE fish consumption advisories, state or federal agencies, tribal governments, the public, and academic institutions.

In further identifying WQLSs, KDHE provided for public participation by requesting comments on the February 1, 2008 *Listing Methodology* used in determining impaired waterbodies, requesting data from various agencies and stakeholder, holding public meetings, and providing a 30-day public comment period on the draft CWA § 303(d) list. KDHE also responded to comments received on the draft 303(d) listing methodology and the draft CWA § 303(d) list.

Kansas' last EPA approved CWA § 303(d) list was the state's 2004 § 303(d) list which was approved by EPA on December 22, 2005. In this submittal, KDHE included its assessment methodology to identify waters that did not meet the state's WQS and, therefore, were required to be included on CWA § 303(d) lists. The 2008 *Listing Methodology* included revisions to the methodology used in the 2004 CWA § list.

Of notable difference in the 2008 *Listing Methodology* is a new screening approach that identifies waters impacted by total suspended solids (TSS) and/or total phosphorous (TP). Since neither TSS nor TP have numeric criteria in Kansas' WQS program, this screening approach identifies those waters that are the most severely impacted. Identification of waterbodies in Category 5 is the first step in restoring the chemical and biological integrity of the waterbody.

By adopting a 3x factor of EPA's recommended 67 micrograms per liter (µg/L) TP value (*See,* Ambient Water Quality Criteria Recommendations: Information on Supporting the Development of State and Tribal Nutrient Criteria: Rivers and Streams in Nutrient Ecoregion V, EPA 822-B-01-014, December 2001), the use of a screening value of 201 µg/L TP to list streams in Category 5 ensures KDHE is listing the most severely impacted TP streams.

After analyzing 15 years of TSS data and associated biological data, KDHE elected to use a 50 milligrams per liter (mg/L) median TSS threshold value for placing classified streams into Category 5 for aquatic life impairment. KDHE finds that the 50 mg/L value supports "aquatic life richness" based on the state's four biological metrics of:

1) Macroinvertebrate Biotic Index,

2) Kansas Biotic Index,

3) Ephemeroptera, Plecoptera, Trichoptera Index (EPT), and

4) EPT Abundance

We would like to commend KDHE for taking a proactive approach for determining TP and TSS impacted waters. We hope that data gathering and TMDL development for these TP and TSS impacted streams will facilitate the development and adoption of numeric criteria for these pollutants in the near future.

Essentially, this KS 2006/2008 § 303(d) list is a continuation of the last EPA approved KS § 303(d) list in 2004. Part of our review involved tracking those waters listed as impaired in the KS 2004 § 303(d) list to its new Category in the KS 2006/2008 § 303(d) list. Most of the monitoring station/pollutant combinations (for streams) and waterbody/pollutant combinations (for wetlands and lakes) listed in 2004 continue to be listed impaired in Category 5. Others have been placed into Category 4a because of EPA approved TMDLs. Other waters listed as impaired in the KS 2004 § 303(d) list were moved into Category 2, 3, 4b or 4c. For reference, Table 1 documents the placement of impaired waters in the KS 2004 § 303(d) list (*See,* Table 1 of EPA's December 22, 2005 decision document) to their new Category in the KS 2006/2008 § 303(d) list and the rationale supporting the water's new Category. Additionally, EPA is correcting typographical errors found in Table 1 of our December 22, 2005 decision letter on the KS 2004 § 303(d) list.

Waters listed as impaired for turbidity on the KS 2004 § 303(d) list were carried over as impaired in Category 5 of the 2006/2008 § 303(d) list. However, KDHE chose to change the pollutant to siltation. The reason for this, as described by KDHE is, "We are viewing turbidity as a characteristic of the more general type of impairment called siltation." EPA essentially views siltation or turbidity as the same pollutant, therefore we approve of the change in pollutant from turbidity to siltation.

V. Waterbody Monitoring

KDHE uses a watershed approach for stream monitoring where a network of stream chemistry and biological monitoring stations provide valuable information to assess the condition of the state's classified streams. KDHE currently has 317 chemistry monitoring stations located throughout the state's twelve major river basins. Of the 317 stations, about 165 "fixed" stations are sampled bi-monthly throughout the year. The remaining 152 "rotational" stations are monitored using a four-year rotational cycle. In doing so, this network of monitoring stations provides water quality information for more than 97 percent of the state's classified streams. These stations represent the assessment units for flowing waters that are in the monitoring station's drainage area. Because of this watershed approach, KDHE lists impaired monitoring station/pollutant pairs rather than waterbody/pollutant pairs. For the purpose of our decision today, the table of impaired streams (*See,* Table 2) on the KS 2006/2008 § 303(d) list details not only the identification of the impaired station/pollutant pair but also the individual stream(s) that belong to the monitoring station's drainage area.

For standing waters, the individual, monitored lake or wetland represent the sole assessment unit. Currently, there are 121 lakes and wetlands that KDHE samples on a three to five year rotational process. Unlike streams which are listed as impaired monitoring station/pollutant combinations, lakes and wetlands are listed by KDHE as individual waterbody/pollutant pairs.

VI. The Kansas 2006/2008 § 303(d) List

A. Identification of Category 5 Impaired Waters

EPA has reviewed KDHE's description of data and information it considered, its 2008 *Listing Methodology* for identifying waters, and public comments on the KS 2006/2008 § 303(d) list. EPA concludes that the state properly assembled and evaluated all existing and readily available water quality related data and information, including data and information relating to the categories of waters specified in 40 CFR § 130.7(b)(5) and reasonably identified waters required to be listed.

Table 2 of this enclosure represents Category 5 streams. The table lists the station/pollutant pair combinations that are impaired on the KS 2006/2008 § 303(d) list and thus requires development of TMDLs to address the impairment(s). For completeness, EPA has also listed the classified stream segments that are represented within the monitoring station's drainage area.

Table 3 of this enclosure represents the lakes and wetlands that are Category 5 waters. The lakes and wetlands in Table 3 are identified as impaired for the listed pollutant(s) and thus require the development of a TMDL in an effort to restore the biological and chemical integrity of the water.

B. Delistings

For these waters, KDHE has concluded that "available data and/or information indicate that some, but not all of the designated uses are supported." Federal regulations in 40 CFR § 130.7(6) allows for states to not include water(s) on their § 303(d) list. In *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act,* is a description of what constitutes good cause for removing a water from the § 303(d) list, which is made up of waters identified in Category 5 of a state's IR. In summary, consistent with 40 CFR § 130.7(b), good cause for not including segments on the 303(d) list may be based on:

1) new information or more sophisticated water quality modeling is available that demonstrates the applicable WQS(s) is being met,

2) flaws in the original analysis of data and information led to the waterbody being incorrectly listed,

3) effluent limitations required by state or local authorities that are more stringent than technology-based effluent limitations, required by the CWA, will result in the attainment of WQS for the pollutant causing the impairment (pursuant to 40 CFR § 130.7(b)(1)(iii)),

4) other pollution control requirements required by state, local or federal authority will result in attainment of WQS within a reasonable period of time (pursuant to 40 CFR § 130.7(b)(1)(iii)),

5) documentation that the state included on a previous 303(d) list an impaired segment that was not required to be listed by EPA regulations, e.g., segments where there is no pollutant associated with the impairment, and

6) the waterbody and pollutants are addressed in a TMDL approved or established by EPA.

C. Identification of Category 2 Delistings

EPA reviewed water quality data to demonstrate good cause as to why a waterbody should not be listed on the state's list of impaired waters. We agree with the state's conclusion that these previously impaired monitoring stations (for streams) or lakes/wetlands now meet WQS and are no longer appropriate as Category 5 waters.

Table 4 of this enclosure lists all Category 2 waters and the rationale supporting the water no longer being listed as impaired.

D. Identification of Category 3 Waters

Placement of waters in Category 3 means that there is an insufficient amount of data or no data and/or information to determine, consistent with the state's listing methodology, if any

designated use is attained. As suggested by the IR, states that identify Category 3 waters should prioritize these waters for follow-up monitoring. This monitoring should be conducted in a manner consistent with the state's overall monitoring strategy and schedule.

Table 5 of this enclosure lists all of the Category 3 waters and the rationale supporting placement in Category 3.

E. Identification of Category 4a Waters

For this category, KDHE has identified the waters where a TMDL has been approved by EPA. We encourage KDHE to implement the practices described in the TMDL as soon as practicable to restore the water's assigned designated use(s).

Table 6 of this enclosure lists all Category 4a waters since the approval of the KS 2004 § 303(d) list. TMDL approval dates in Table 6 reflect the date of EPA approval.

F. Identification of Category 4b – Permit in Lieu of a TMDL Waters

In this KS 2006/2008 § 303(d) list submittal, KDHE recommended altering the original categorization of all waters placed in Category 4b during the 1999-2006 Consent Decree periods. In all cases regarding these Category 4b waters, the original impairments were identified in the KS 1996 § 303(d) list and KS 1998 § 303(d) list. The impairments were speculative, based upon wasteload modeling and the condition of the wastewater treatment facilities at the time.

EPA reviewed each of the Category 4b waters on a case by case basis to determine whether or not the National Pollutant Discharge Elimination System (NPDES) permit was adequate for the water to not be included in Category 5. The six elements of our review are described in Section IV.A. of this enclosure.

Table 7 of this enclosure lists all 2004 303(d) list Category 4b waters and the rationale supporting their placement in Categories 2, 3 and 5, or remaining in Category 4b. Each of the nine Category 4b waters meets the six required elements described in Section IV.A. of this enclosure.

G. Identification of Category 4b – Watershed Plan in Lieu of a TMDL Waters

Based on this review, EPA finds that KDHE's Category 4b demonstration is adequate for all of the proposed atrazine impaired segments (11 total) in the following three watersheds in the Little Arkansas River subbasin. These watersheds do not need to be included on the KS 2006/2008 § 303(d) list:

- Turkey Creek (watershed upstream of KDHE monitoring station SC533)
- Emma Creek (watershed upstream of KDHE monitoring station SC534)
- Sand Creek (watershed upstream of KDHE monitoring station SC535)

The atrazine impaired segments in the Emma Creek and Sand Creek watersheds were originally listed as impaired on the KS 2004 § 303(d) list. The atrazine impaired segments in the Turkey Creek watershed are new assessment determinations for the combined KS 2006/2008 § 303(d) list; hence, these segments have not been included on KDHE's previous § 303(d) lists.

As part of the Category 4b demonstration, KDHE is expected to provide to EPA a progress report on atrazine reduction efforts and water quality response in the Category 4b watersheds by April 1 for each § 303(d) reporting cycle. If the reduction efforts lag or there is no tangible decrease in atrazine levels, KDHE plans to initiate development of atrazine TMDLs in these watersheds in 2011. If the reduction efforts are making progress towards meeting the atrazine water quality target by 2011-2012, but cannot yet bring about attainment of the water quality target by 2012, KDHE plans to defer the decision to develop TMDLs until 2016 – when the Category 4b demonstration estimates that the atrazine WQS should be met. The 2016 target is consistent with EPA guidance that TMDLs be developed within 8-13 years of an impaired water being initially included on a state's § 303(d) list.

Background: The Little Arkansas Watershed Restoration and Protection Strategy (WRAPS), completed in 2004, outlines restoration and protection goals and action for the surface and groundwaters of the Little Arkansas River subbasin. The WRAPS was developed by a stakeholder leadership team consisting of agency advisors (including Kansas State University [KSU] Research and Extension, Natural Resource Conservation Service [NRCS], local County Conservation Districts, and KDHE) and local stakeholders (including producers and atrazine applicators that would need to implement the voluntary Best Management Practices (BMP)). The leadership team is currently implementing the WRAPS strategies identified to restore atrazine impaired waters in the subbasin. The elevated atrazine levels are associated with agricultural nonpoint sources: there are no point source dischargers of atrazine in the subbasin. Key aspects of the WRAPS for atrazine include (1) an outreach/education program for the agricultural community (i.e., producers) on atrazine application rates, timing, alternatives, and label instructions, and (2) an atrazine BMP program that includes BMP demonstration sites, on-farm visits by KSU extension staff to promote voluntary atrazine BMPs, and incentive payments to producers that sign up for and employ the voluntary BMPs.

The foundation of KDHE's original Category 4b demonstration dated February 22, 2008, is the Little Arkansas WRAPS. The original demonstration supplemented the WRAPS by including loading analyses, an implementation progress report for atrazine reduction efforts in 2006 and 2007, and additional information to address EPA's Category 4b guidance. The original demonstration was intended to address all atrazine impaired segments in the Little Arkansas River subbasin.

KDHE submitted an addendum dated October 10, 2008, to the original Category 4b demonstration to address additional conversations with EPA and the WRAPS leadership team on atrazine reduction efforts in the subbasin. The addendum includes additional information to address EPA's Category 4b expectations, including implementation progress in 2008, extent of acres in the Category 4b watersheds needing BMPs, cost estimate for implementing the BMPs, and a refined approach to tracking and reporting implementation progress each § 303(d) reporting cycle. In addition, KDHE refined the Category 4b demonstration to address a portion

of, rather than the entire, Little Arkansas River subbasin. Specifically, the addendum proposes the atrazine impaired segments in the following four watersheds for Category 4b:

- Turkey Creek (upstream of KDHE monitoring station SC533)
- Emma Creek (upstream of KDHE monitoring station SC534)
- Sand Creek (upstream of KDHE monitoring station SC535)
- Black Kettle Creek (upstream of KDHE monitoring station SC705)

After review of the original Category 4b demonstration and addendum, EPA and KDHE discussed that data and information are not available to support that segments in the Black Kettle Creek watershed are impaired by atrazine. Also no segments in the Black Kettle Creek watershed have been included on the state's § 303(d) list during previous reporting cycles. Hence, because there are no known atrazine impaired segments in the Black Kettle Creek watershed, EPA did not review or comment on the Category 4b demonstration for this watershed. However, EPA understands that the WRAPS leadership team and producers have made significant progress in implementing atrazine reductions strategies in the Black Kettle Creek watershed. EPA encourages the continuation of these efforts.

Based on the above history of communication, EPA considered the following documents as part of KDHE's final Category 4b demonstration:

- WRAPS for the Little Arkansas River Watershed (October 2004)
- Kansas Category 4b determination for the Little Arkansas River Basin (February 22, 2008), including the Little Arkansas River implementation accomplishments report for 2006 and 2007
- Kansas Category 4b determination for the Little Arkansas River Basin Addendum (October 10, 2008)

EPA's assessment of KDHE's final Category 4b demonstration for the atrazine impaired segments in the Turkey, Emma, and Sand Creek watersheds is provided in the remainder of this section. The assessment parallels the six following Category 4b elements identified in EPA's Category 4b guidance (*See,* Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions, October 12, 2006 Memorandum). The assessment represents a summary of key information provided in the documents listed above; however, specific references are made as appropriate.

Element #1 – Identification of Segment and Statement of Problem Causing Impairment

Segment Description
The demonstration should identify the impaired segment, including name, general location in the state, and state-specific location identifier.

KDHE uses a watershed approach for both water quality sampling and assessment determinations. According to the Category 4b demonstration, atrazine impairments were identified at KDHE monitoring stations SC533, SC534, and SC535. KDHE has identified the three watersheds upstream of these monitoring stations as impaired for atrazine. The three

atrazine impaired watersheds assigned to Category 4b and associated segments (11 total), are shown in the table below.

Category 4b Watershed	Segment		
	Main	**Tributary 1**	**Tributary 2**
Turkey Creek (upstream of monitoring station SC533)	Turkey Creek, segment 11 Turkey Creek, segment 12	Dry Turkey Creek, segment 13 Running Turkey Creek, segment 25	Bull Creek, segment 24
Emma Creek (upstream of monitoring station SC534)	Emma Creek, segment 6	Emma Creek, Middle, segment 7 Emma Creek, West, segment 8	None
Sand Creek (upstream of monitoring station SC535)	Sand Creek, segment 4	Mud Creek, segment 16 Beaver Creek, segment 26	None

The three Category 4b watersheds are located in the Little Arkansas River subbasin (HUC 11030012). This subbasin is located in south central Kansas and includes the counties of Ellsworth, Rice, McPherson, Reno, Harvey, Marion, and Sedgwick. The subbasin is northwest of the Wichita, Kansas

Impairment and pollutant causing impairment
The demonstration should identify the applicable water quality standard(s) not supported for each segment and associated pollutant causing the impairment.

According to the Category 4b demonstration and further clarification from KDHE, the designated use impaired by elevated atrazine levels in the three Category 4b watersheds is expected aquatic life support. The applicable numeric atrazine criteria for expected aquatic life support are 3 µg/L (chronic) and 170 µg/L (acute) (KAR 28-16-28e(c)(2)(D)(ii)). The Category 4b watersheds and associated segments are not meeting the chronic criterion.

Sources of pollutant causing impairment
The demonstration should include a description of the known and likely point, nonpoint, and background (upstream inputs) sources of the pollutant causing the impairment, including the magnitude and locations of the sources.

The Category 4b demonstration identifies the source of elevated atrazine levels as agricultural nonpoint source pollution and indicates that there are no point source dischargers of atrazine in the Category 4b watersheds. The demonstration states that atrazine has been used since the 1960's for selective control of broadleaf and grass weeds in corn and grain sorghum row crops. Because of its high solubility in water, atrazine is susceptible to removal from cropland during overland runoff events. Based on data and information provided in the Category 4b demonstration, the extent of corn and grain sorghum acres in the Category 4b watersheds is provided in the table below.

Category 4b watershed	Drainage Area (acres)	Number of Rowcrop Acres	Estimated Number of Grain Sorghum and Corn Rowcrop Acres
Turkey Creek (upstream of monitoring station SC533)	178,560	95,680	23,920 (13% of drainage area)
Emma Creek (upstream of monitoring station SC534)	112,000	85,280	19,614 (18% of drainage area)
Sand Creek (upstream of monitoring station SC535)	66,559	39,110	12,124 (18% of drainage area)

EPA Assessment of Element #1: Consistent with EPA's Category 4b guidance, EPA finds that the Category 4b demonstration identifies the impaired segments, pollutant causing the impairment, designated use not met, and source of the pollutant causing the impairments.

Element #2 – Description of Pollution Controls and How They Will Achieve Water Quality Standards

Water quality target
The demonstration should identify a numeric water quality target(s) - a quantitative value used to measure whether or not the applicable water quality standard is attained.

According to the Category 4b demonstration and further clarification with KDHE, the atrazine water quality target is the chronic atrazine criterion for expected aquatic life support of 3 µg/L.

Point and nonpoint source loadings that when implemented will achieve WQS
The demonstration should describe the cause-and-effect relationship between the water quality standard (and numeric water quality target as discussed above) and the identified pollutant sources and, based on this linkage, identify what loadings are acceptable to achieve the water quality standard.

The Category 4b demonstration identifies a 50% reduction in atrazine loading to each of the three KDHE sampling stations (i.e., SC533, SC534, and SC535) during the runoff period to achieve the water quality target. The runoff period, which generally occurs from April through July, represents the time when the concentration of atrazine is highest because of recent atrazine applications and increased precipitation events which result in the movement of atrazine into water bodies. KDHE's loading analysis is provided in the original Category 4b demonstration.

Controls that will achieve WQS
The demonstration should describe the controls already in place, or scheduled for implementation, that will result in reductions of pollutant loadings to a level that achieves the numeric water quality standard. The demonstration should also describe the basis upon which the state concludes that the controls will result in the necessary reductions.

As discussed above, the Category 4b demonstration targets a 50% reduction in atrazine loading to each station during the runoff period to achieve the atrazine water quality target. According to the demonstration, KDHE proposes to achieve these load reductions through atrazine control activities identified through the WRAPS process for the Little Arkansas River subbasin. These activities include (1) an outreach/education program for the agricultural community, i.e., producers, on atrazine application rates, timing, alternatives, and label instructions, and (2) an atrazine BMP program that includes BMP demonstration sites, on-farm visits by KSU extension staff to promote voluntary atrazine BMPs, and incentive payments to producers that sign up for and employ the voluntary BMPs.

The voluntary atrazine BMPs being promoted through the WRAPS process are consistent with current atrazine label restrictions; however, the BMPs go beyond the current label restrictions because they call for applying less atrazine on the ground than the label permits. The voluntary BMPs have published removal efficiencies that range from 25% (e.g., use split applications of atrazine such as 2/3 prior to April 15 and 1/3 at planting) to 100% (e.g., use no atrazine). The Category 4b demonstration states that where the BMPs with less than 50% reduction efficiencies are implemented, additional BMPs will be used such that the sum of effectiveness will be 50% or greater.

In addition to the estimated removal efficiencies, the Category 4b demonstration indicates that the voluntary atrazine BMPs being implemented under the WRAPS are effective in reducing atrazine loads and improving water quality. Specifically, the submittal indicates that water quality monitoring of "targeted" subwatersheds treated with atrazine BMPs had lower atrazine concentrations (ranging from 18% to 40%) over a two year period than co-monitored untreated subwatersheds.

Description of requirements under which pollution controls will be implemented
The demonstration should describe the basis for concluding that the pollution controls are requirements. EPA will consider a number of factors in evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulations, including:

- ***authority (local, state, federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing state or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls)***
- ***existing commitments made by the sources to implement the controls (including an analysis of the amount of actual implementation that has already occurred)***
- ***availability of dedicated funding for the implementation of the controls; and***
- ***other relevant factors as determined by EPA depending on case-specific circumstances.***

Authority

The Category 4b demonstration indicates that producers and applicators that use atrazine in the Category 4b watersheds must comply with existing label restrictions and Kansas state law. Under Kansas state law, persons that apply atrazine are required to become certified applicators,

which includes training on atrazine label restrictions, and may be subject to fines if pesticides are not used in a manner consistent with the pesticide's label.

The voluntary atrazine BMPs being promoted in the Category 4b watersheds to achieve the atrazine water quality target are consistent with atrazine labeling; however, the voluntary BMPs go beyond the current label restrictions because they call for applying less atrazine on the ground than the label allows. Hence, as discussed below, KDHE's assurances that the voluntary BMPs will be implemented and maintained are based primarily on the extent of (1) existing commitments to implement the needed BMPs, (2) dedicated funding to support full implementation of needed BMPs, and (3) other relevant factors specific to the watersheds under consideration for Category 4b.

Existing Commitments

The Category 4b demonstration indicates that development of the Little Arkansas River WRAPS represents a fundamental first-step commitment to restore the watershed and achieve the atrazine water quality target. The likelihood of the WRAPS being implemented is enhanced because the WRAPS leadership team that developed the strategy included agency advisors (including KSU Research and Extension, Natural Resource Conservation Service, local County Conservation Districts, and KDHE) and local stakeholders (including producers and atrazine applicators that would need to implement the voluntary BMP practices).

Implementing the WRAPS in the Category 4b watersheds involves obtaining and maintaining commitments from multiple key stakeholders, including:

- WRAPS leadership team – leading implementation of the WRAPS plan which includes the information/education and BMP programs and the identification and management of implementation funds,
- Producers – implementing the voluntary atrazine BMP programs, and
- Funding sources – funding the information/education and BMP programs.

According to the Category 4b demonstration, the key stakeholders' commitment to implementing the WRAPS in the Category 4b watersheds is exemplified in their implementation actions over the past three years of 2006, 2007, and 2008. These implementation actions, which are highlighted below, have focused on six "targeted" subwatersheds in the Little Arkansas River subbasin, Upper Turkey Creek, Upper West Emma Creek, Black Kettle Creek, Upper Blaze Fork Creek, Lower Sand Creek, and Kisiwa Creek. Three of these "targeted" subwatersheds, Upper Turkey Creek, Upper West Emma Creek, and Lower Sand Creek, are subwatersheds of the corresponding Category 4b watersheds.

<u>WRAPS Group Implementation Actions</u>

- Established a website to communicate information to stakeholders regarding BMP practices, goals of the WRAPS process, and general information on projects being implemented as nonpoint source management measures.

- Coordinated public meetings for producers and other stakeholders and conducted door-to-door surveys of targeted land owners to establish a baseline on BMP use.
- Distributed an educational publication "Atrazine Best Management Practices for the Little Arkansas River Watershed" to producers.
- Conducted over 220 on-farm visits to promote and sign up producers for the voluntary BMP incentive program: 50 visits in 2006, 77 visits in 2007, and 96 visits in 2008.
- Trained over 340 farmers and consultants in 2006 and 2007 regarding atrazine BMPs.
- Established and operated demonstration projects at three farm fields to learn about and promote the effectiveness of the voluntary atrazine BMPs.
- Installed automated surface water monitoring systems to evaluate the effectiveness of BMP implementation.
- Used radio interviews and newspaper articles to educate local communities about atrazine BMPs.
- Provided and managed over $100,000 in incentive payments to producers to implement voluntary BMPs: ~$20,000 (2006), ~$38,000 (2007), and ~$49,000 (2008).

Producers Implementation Actions

- Number of producers implementing voluntary BMP practices that received on-farm visits in the "targeted" subwatersheds has generally been high: 80% in 2006, 99% in 2007, and 98% in 2008.
- Number of producers participating in the voluntary BMP incentive program more than doubled over the past three years: 40 producers in 2006, 74 producers in 2007, and 95 producers in 2008.
- Number of voluntary BMP acres has more than tripled over the past three years: 4,792 acres in 2006, 10,545 acres in 2007, and 13,044 acres in 2008 – the later representing about 44% of the total potential BMP acres (i.e., corn and grain sorghum acres) in the six "targeted" subwatersheds.

Funding Sources

Over the past three years, up to $250,000 has been invested in the six "targeted" subwatersheds to implement the information/education and BMP programs. KDHE's CWA Section 319 program funds represent the primary funding source, with matching contributions from within the Little Arkansas River subbasin (i.e., City of Wichita, Kansas) and the State Conservation Commission.

KDHE references the above level of commitments and implementation success in the "targeted" subwatersheds from 2006 to 2008 to demonstrate that the information/education and BMP programs can be a successful strategy for obtaining the remaining commitments necessary to achieve the atrazine water quality target for the Category 4b watersheds.

Dedicated Funding

Cost Estimate

According to the Category 4b demonstration, KDHE anticipates that producers will eventually adopt the voluntary BMPs into their standard operation procedures without the incentive payments. Until that time, funding is needed to fully implement the information/education and BMP programs – namely funds to support the voluntary BMP incentive payments. KDHE estimates that about $180,000/year is needed to fully fund and implement the voluntary BMP incentive payments in the Category 4b watersheds plus the Black Kettle Creek watershed.

Funding Sources

According to the Category 4b demonstration, the primary funding source to fully implement the plan will be EPA CWA Section 319 grant funds and State Water Plan funds that are dedicated to WRAPS and managed through KDHE. As available, the WRAPS leadership team will use supplemental or matching funds from other agencies United States Department of Agriculture (USDA) and stakeholders in the Little Arkansas River subbasin (e.g., City of Wichita, Kansas).

Adequacy of Funding Sources

According to the Category 4b demonstration, KDHE's total CWA Section 319-grant allocation for WRAPS statewide is typically $1.2 million/year matched with $800,000 in state Water Plan funds. Because reduced atrazine levels benefit water supply sources for the City of Wichita, Kansas, supplemental funding support by the city has been provided.

KDHE also provides a commitment in the Category 4b demonstration to continue funding the Little Arkansas River WRAPS in the Category 4b watersheds through these funding sources. Among the 44 active WRAPS projects in Kansas, the Little Arkansas WRAPS is considered among the top ten in priority for implementation. Furthermore, the Little Arkansas River subbasin has been selected by Kansas to evaluate success in improving water quality in order to meet EPA's SP-12 performance measure.

In addition, the WRAPS leadership team has successfully demonstrated an ability to obtain and manage implementation funds over the past three years.

Other Relevant Factors

As described in the Category 4b demonstration, KSU was selected by the Little Arkansas WRAPS group to lead the WRAPS planning effort which encompasses research, water quality monitoring, and extension programs for the WRAPS implementation activities. Hence, there is continuity in the lead entity/organization developing and implementing the WRAPS. KSU provides a significant amount of technical expertise to the restoration process. KSU began research in the late 1980s to identify BMPs that would help control atrazine runoff into drinking

water supplies and has published recommended atrazine BMPs and effectiveness. KSU staff participating in the WRAPS are trained agronomists and watershed specialists which facilitates development and implementation of a sound restoration strategy.

EPA Assessment of Element #2: Consistent with EPA's Category 4b guidance, the Category 4b demonstration provides an appropriate water quality target for atrazine, adequately identifies the loads needed to achieve the atrazine target, and provides a description of the controls and the basis upon which the controls are expected to result in attainment of the atrazine water quality target. The description identifies atrazine BMP removal efficiency estimates, watershed-specific data, and information to support that the BMPs used should be effective in reducing atrazine loads and achieving the water quality target. EPA finds that it is reasonable to expect that the controls, if implemented as planned, should lead to attainment of the atrazine water quality target.

The submittal discusses each of the factors, i.e., authority, commitments, dedicated funding, and other relevant factors, EPA considers to determine whether adequate assurances are provided that the controls needed to achieve the water quality target will be implemented. Although the proposed controls are voluntary, EPA finds the assurances adequate given the following factors:

- Commitments – Relevant stakeholders in the Category 4b watersheds including the WRAPS group, producers, and funding source [including KDHE]) have demonstrated a track record of commitments to implement and maintain the controls where the WRAPS plan has been employed (i.e., the "targeted" subwatersheds). This demonstrates that the WRAPS plan can be a successful strategy to obtain the remaining commitments necessary to achieve the atrazine water quality target for the Category 4b watersheds.
- Funding – The submittal provides a cost estimate for implementing key actions, identifies key funding sources, and demonstrates that the funding sources are adequate to meet the cost estimate. Also, KDHE has demonstrated a commitment to providing state funds to implement the WRAPS plan in the Category 4b watersheds. The WRAPS leadership team has also demonstrated a track record of obtaining and managing implementation funds.
- Other relevant factors - KSU's involvement in the implementation efforts provides significant continuity and technical expertise to the implementation efforts.

EPA understands that collection of additional data and information in the WRAPS "targeted" subwatersheds and demonstration project sites may yield more refined, site-specific estimates of BMP removal efficiencies. Such refinements may facilitate improved selection, targeting, and costing of needed BMPs. EPA expects that KDHE and the WRAPS leadership team will incorporate any such refined estimates into the implementation strategy and identify such changes in KDHE's biennial progress report to EPA for the Category 4b watersheds.

Element #3 – Estimate or Projection of Time When WQS Will Be Met

The demonstration should provide a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for the conclusion, and describe why the time estimate for the controls to achieve WQS is reasonable.

The Category 4b demonstration indicates that the atrazine water quality target is expected to be achieved in the Category 4b watersheds by 2016. This estimate is based on the overall 10-year BMP implementation schedule developed as part of the WRAPS process.

EPA Assessment of Element #3: Consistent with EPA's Category 4b guidance, the 4b demonstration provides a time estimate to achieve the atrazine water quality target. EPA finds the time estimate reasonable given the case-specific considerations in these Category 4b watersheds, including the behavior of the specific pollutant, nonpoint source of the pollutant, nature of the voluntary control actions, extent of implementation that remains to be completed, and associated implementation costs.

Element #4 – Schedule for Implementing Pollution Controls

The demonstration should describe, as appropriate, the schedule by which the pollution controls will be implemented and/or which controls are already in place.

The Category 4b demonstration provides a baseline estimate of 60,300 existing acres of corn and grain sorghum eligible for voluntary atrazine BMPs in the Category 4b watersheds. The goal is to make significant BMP implementation progress each listing cycle such that the atrazine water quality target is achieved by 2016. Thus, the current implementation strategy calls for voluntary atrazine BMPs, with an average removal efficiency of 50%, on all of the 60,300 acres by 2016. Until producers incorporate the voluntary atrazine BMPs into their standard operating procedures without incentive payments, funding will need to be available to support the outreach/education and BMP programs until the water quality target is achieved.

The Category 4b addendum Table 11 (reproduced below) indicates that implementation of the voluntary atrazine BMPs has increased over the past three years in the Category 4b watersheds. The extent of implementation in 2008 is estimated to range from 10% in the Turkey Creek watershed to 27% in the Sand Creek watershed.

Category 4b watershed	Estimate of Grain Sorghum & Corn Acres	2006 BMP Acres	2007 BMP Acres	2008 BMP Acres
Turkey Creek (upstream of monitoring station SC533)	23,920	1,818 (8%)	1,184 (5%)	2,386 (10%)
Emma Creek (upstream of monitoring station SC534)	19,614	1,688 (9%)	1,901 (10%)	2,632 (13%)
Sand Creek (upstream of monitoring station SC535)	12,124	0	3,140 (25%)	3,209 (27%)

The Category 4b demonstration indicates that KDHE anticipates significant progress will be achieved in improving the atrazine impairment within the Category 4b watersheds by the 2010 § 303(d) listing cycle. Annual implementation goals, which are set by the WRAPS leadership team, have not yet been established for 2009 and 2010.

EPA Assessment of Element #4: Consistent with EPA's Category 4b guidance, the Category 4b demonstration provides an overall implementation schedule to attain the atrazine water quality target in the Category 4b watersheds by 2016. The submittal also identifies implementation progress made from 2006-2008, as well as the extent of implementation that remains to be completed. EPA finds the overall implementation schedule reasonable given case-specific considerations for these watersheds, including the behavior of the specific pollutant, nonpoint source of the pollutant, nature of the voluntary control actions, extent of implementation that remains to be completed, and associated implementation costs.

EPA understands that the WRAPS leadership team implementation strategy for atrazine currently encompasses the entire Little Arkansas River subbbasin. EPA expects that KDHE will coordinate with the WRAPS group prior to the next CWA Section 303(d) listing cycle to convey that 1) the Category 4b demonstration focuses on three watersheds in the Little Arkansas River subbasin, and 2) continuing to make and schedule implementation progress in these three watersheds such that the implementation goal, attaining the atrazine water quality target by 2016, can be met is an important consideration in maintaining these watersheds in Category 4b.

Element #5 – Monitoring Plan to Track Effectiveness of Pollution Controls

The demonstration should include a description of, and schedule for, monitoring milestones to track effectiveness of the pollution controls. The demonstration should describe water quality monitoring that will be performed to determine the combined effectiveness of the pollution controls on ambient water quality. If additional monitoring will be conducted to evaluate the effectiveness of individual pollution controls, EPA encourages states to include a description of these efforts as well. The demonstration should identify how and when assessment results from the monitoring will be reported to the public and EPA.

The Category 4b demonstration indicates that KDHE will coordinate with the WRAPS group to provide a progress report on atrazine reduction efforts in the Category 4b watersheds by April 1st for each 303(d) reporting cycle. The report will include implementation progress for each Category 4b watershed as indicated below:

- Total acres with voluntary atrazine BMPs each year,
- Of the total acres each year, the percentage of acres of each type of BMPs used, e.g., early application, pre-plant incorporation, and the associated atrazine removal efficiency estimate for each type of BMP, and
- Total number of producers that receive on-farm visits and sign up to implement the voluntary BMPs each year compared to the total number of producers that only receive an on-farm visit.

According to the Category 4b demonstration, the progress report will also include results from water quality monitoring at KDHE's monitoring stations at the downstream pour points of the Category 4b watersheds (i.e., Station SC533, SC534, SC535). These stations are sampled on a four year rotation, e.g., 2006, 2010, 2014. As appropriate, KDHE will also discuss results from KDHE and U.S. Geological Survey (USGS) permanent/fixed stations on the Little Arkansas River and directed monitoring by KSU on the Little Arkansas River, tributaries, and atrazine BMP demonstration project sites.

According to the Category 4b demonstration, KDHE believes assessing and reporting out on these multiple lines of implementation and water quality response data/information will facilitate the following:

- Assessment of progress and challenges occurring in the Category 4b watersheds,
- Clarification of what corrective actions may be needed, and
- Flexibility for the WRAPS group and KDHE to continue to demonstrate progress toward the goal of achieving the atrazine water quality target in the 4b watersheds by 2016.

EPA Assessment of Element #5: Consistent with EPA's Category 4b guidance, the Category 4b demonstration provides a description of, and schedule for, monitoring implementation and water quality in the Category 4b watersheds. Because implementation of the proposed controls, e.g., BMPs, are voluntary actions producers will make on an annual basis, demonstrating progress toward the restoration goal, i.e. attain the atrazine water quality target by 2016, each § 303(d) reporting cycle is an important element of maintaining these watersheds in Category 4b. KDHE's proposed implementation and water quality progress report is a reasonable means to track progress in the watershed and should facilitate KDHE's and EPA's assessment of whether or not to maintain these watersheds in Category 4b for future § 303(d) reporting cycles.

Element #6 – Commitment to Revise Pollution Controls, as Necessary

The demonstration should provide a statement that the state commits to revising the pollution controls, as necessary, if progress towards meeting water quality standards is not being shown. Also, the demonstration should identify how any changes to the pollution controls, and any other element of the original demonstration, will be reported to the public and EPA.

The Category 4b demonstration indicates that KDHE is committed to continuing to offer resources and expertise to the WRAPS leadership team to enhance implementation efforts to ensure the Category 4b watersheds make progress towards meeting the goal of achieving the atrazine water quality target by 2016. The demonstration also indicates that KDHE is committed to revise the strategy if progress is not documented.

Further the submittal indicates that if participation lags or there is no tangible decrease in atrazine levels KDHE will initiate the development of a TMDL in 2011. If the watershed strategy is making progress towards meeting water quality goals in 2011-2012, but cannot yet bring about delistings in 2012, KDHE will defer the decision to develop TMDLs until 2016.

EPA Assessment of Element #6: Consistent with EPA's Category 4b guidance, the Category 4b demonstration provides a statement that KDHE is committed to working with the WRAPS group to revise the pollution controls in the Category 4b watersheds (if needed). In addition, waters identified as impaired in the Category 4b watersheds were originally identified as impaired for either the 2004 (Emma Creek and Sand Creek) or combined 2006/2008 (Turkey Creek) § 303 (d) lists. Hence, KDHE's commitment to develop TMDLs for these waters by 2016 if the implementation strategy is not sufficient is consistent with EPA guidance that TMDLs be developed within 8-13 years of an impaired waters initial inclusion on a state's § 303(d) list.

H. Identification of Category 4c Waters

In this submittal, KDHE recommended that monitoring station SC556 be placed into Category 4c for biology. Monitoring station SC556's drainage area covers 21 streams.

The IR Guidance defines Category 4c as waters that fail "to meet an applicable water quality standard not caused by a pollutant, but instead is caused by other types of pollution." Category 4c waters do not require the development of a TMDL. In the case of Kansas' Category 4c proposal, the type of pollution causing the biological impairment stems from low stream flow. Specifically, KDHE's sampling data from SC556 suggests partial support of biological impairment that was linked to median flow conditions less than 0.1 cubic feet per second (cfs) on four out of five samples. The fifth sample suggested partial biological support during median flow conditions of less than two cfs. KDHE defines biological impairment based of the four biological metrics of:

1) Macroinvertebrate Biotic Index,

2) Kansas Biotic Index,

3) Ephemeroptera, Plecoptera, Trichoptera Index (EPT), and

4) EPT Abundance

The EPA agrees with KDHE's conclusion that the biological impairment of SC556 and the streams that are within its drainage area are not caused by a pollutant. The development of a

TMDL is not necessary. Table 8 of this enclosure lists the Category 4c monitoring station and the streams that drain into the monitoring station's drainage area.